Strengthening pond bunds

the tips of the chelae can be removed while stocking. However, these methods are not commercialised like 'fattening' in ponds, which is more popular among farmers.

Feeding

Crabs are daily fed with trash fish, brackish water clams or boiled chicken waste @ 5-8% of their body weight. If the feed is given twice a day, major share must be given during evening hours.

Water quality

The water quality parameters shall be maintained within the range shown below:

Salinity	-	15-25%
Temperature	-	26-30^0 C
Oxygen	-	> 3 ppm
pH	-	7.8 – 8.5

Harvesting and marketing

Periodically crabs are to be checked for their hardening. Harvesting should be done in the early morning hours or evening hours. The harvested crabs should be washed in good brackish water to remove the dirt and mud and carefully tied without breaking its legs. The harvested crabs have to be kept in moist conditions and away from sunlight, which has a negative effect on survival.

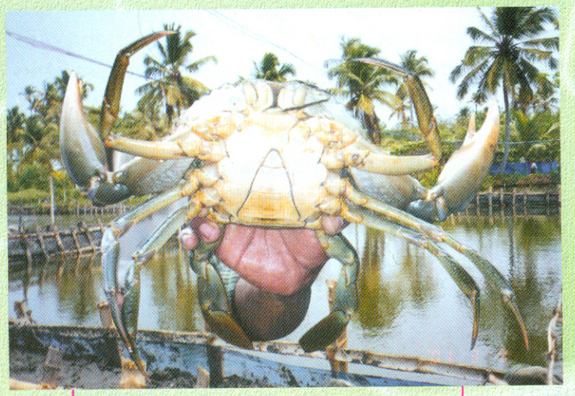
Economics of mud crab fattening

(6 crops/annum)

(0.1 ha tidal pond)

A. Annual fixed cost	**Rs.**
Pond (lease amount)	- 10,000/-
Sluice gate	- 5,000/-
Pond preparation, fencing and misc. charges	- 10,000/-
	25,000/-
B. Operational cost (single crop)	
1. Cost of water crabs (400 crabs @ Rs. 120/kg)	- 36,000/-
2. Feed cost	- 10,000/-
3. Labour charges	- 3,000/-
	49,000/-
Total (6 crops)	2,94,000/
C. Annual total cost (A+B)	3,19,000/-
D. Yield and Revenue	4,60,800/
Production of crabs per cycle: 240 kg	
Total revenue for 6 cycles (Rs.320/Kg)	
E. Net Profit (D-C)	1,41,800/-

- Economics is given for a pond of suitable size which can be easily managed by small / marginal farmers. They can even go for smaller sizes.
- Stocking density is low (0.4 no./m^2) since the suggested stocking size of the crab is about 750g.
- Feeding rate is 10% of the total biomass for the first week and 5% during rest of the period. It is better to use feeding trays to avoid wastage of feed and to maintain good water quality.



A hard mudcrab after harvest >1 kg.

- In well managed ponds, 8 'fattening' cycles can be carried out with 80-85% survival (here only 6 cycles with 75% survival are taken in to consideration).

Conclusion

Crab fattening is getting more importance and many farmers are attracted, due to frequent failure in shrimp farming and short culture period. It is an ideal livelihood option for coastal people those who own/can lease suitable water bodies with good tidal water exchange. But farmers must be aware of the judicious management of their ponds. Unwise practices and destruction of natural habitats will affect the farming in long run. Let us adhere to better practices without forgetting the 'good' lessons learnt from shrimp farming.

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MUD CRAB

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Mud crab

Mud crab is an important aquatic resource in Taiwan, Thailand, Indonesia, Malaysia, Philippines, Australia and Japan. In India, this resource is highly popular due to its great demand in the export market and uncertainties in shrimp farming. The commercial scale mud crab culture is developing fast along the coastal areas of Andhrapradesh, Tamil Nadu, Kerala and Karnataka.

Mud crabs in the genus *Scylla* inhabit coastal areas, estuaries and backwaters. The larger species locally known as 'green mud crab' grows to a maximum size of 22 cm carapace width and 2 kg in weight. These are free living and distinguished by the polygonal markings present on all appendages. The smaller species, 'red claw' is without polygonal markings and has a burrowing habit. This grows to a maximum size of 12.7 cm carapace width and 1.2 kg in weight. Both species have good demand in the domestic as well as in the foreign market.

Culture Methods

Mud crab farming is done by two methods. The

Adult Mud Crab

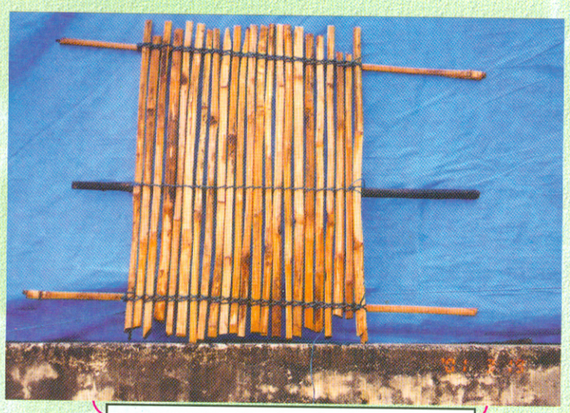
first method is growing young crabs for a period of 5 to 6 months till they attain desirable size, commonly known as grow-out culture. In the second method of fattening, soft shelled crabs are reared for a period of a few weeks till their exoskeleton gets hardened. These 'hard' crabs are locally known as "mud" (meat) and fetch three to four times better price than the soft crabs. Between these two methods, latter is more advantageous since the culture period is short and profitable when enough stocking material is assured.

Grow- out

Mud crab grow-out systems are generally pond based, with or without mangroves, their size varying between 0.5-2 ha, with proper bunds and tidal water exchange. Fencing is advisable if the pond is small and in large ponds where natural conditions are prevailing, strengthening is necessary along the outlet area. Wild collected juvenile crabs of 10-100 g size are used for stocking. The duration of the culture varies between 3-6 months and stocking rates are commonly between 1-3 crabs/ m^2 with supplementary feeding. Feeding is usually with trash fish (wet weight feeding rate-5% per day of the biomass), along with other locally available items like bivalves. Regular sampling is necessary to monitor the growth & general health, and to adjust the feeding rate. Partial harvesting of marketable sized crabs can be started from 3rd month onwards; this 'stock-thinning' provides chances for better survival by reducing the mutual attacks and cannibalism.

In some of the South East Asian countries, grow-out culture is carried out especially in mangrove

Crab Fattening Pond



Bamboo matting for strengthening pond 'inlets'

ponds and mangrove enclosures (Pens), for 90-120 days with a survival between 50-85%. In India, grow-out culture is not popular mainly due to non-availability of crab seeds and commercial feed.

Fattening in ponds

Fattening can be done in small tidal ponds between 0.025-0.2 ha with a water depth of 1 to 1.5 m. Before stocking the soft crabs in the pond, the bottom is prepared by draining the pond water, sun-drying and adding sufficient quantity of lime. Care is taken in strengthening the pond bunds without any holes and crevices. Special care is taken in the sluice area as these crabs have a tendency to escape through nearby areas of sluice gate. The inlet areas should be reinforced with bamboo matting inside the bund. The ponds are fenced properly using bamboo poles and nets along the sides of the bund, which incline towards the pond to prevent the escape of crabs. Soft crabs ("water") collected from local fishermen / crab merchants are stocked in the ponds preferably in the morning hours @ 0.5-2 crabs / m^2 according to the size of the crabs. For crabs of 550g and above, market demand is more. Hence it is ideal to stock crabs belonging to this size group and then stocking density should not be more than 1 crab /m^2. Depending upon the location and availability of water crabs, 6-8 cycles of "fattening" can be carried

Harvested Crabs

out in a pond during one year by repetitive stocking and harvesting.

If the culture pond is big, it is better to divide the pond into different compartments of suitable sizes for stocking crabs of uniform sizes in the same compartment. This is good for manipulating the feeding and is easy to monitor and harvest. When the interval between stockings is wide, crabs of similar sizes can be stocked in one compartment. Sex-wise stocking in compartments is advantageous to reduce the attacks from more aggressive male crabs. It's better to provide shelters like old tyres, bamboo baskets, tiles etc. to minimize mutual attacks and cannibalism.

Fattening in pens and cages

Fattening also can be carried out in pens, floating net cages or bamboo cages in shallow estuarine waterways and inside large shrimp ponds with good tidal water influx. HDPE, netlon or bamboo splits can be used as the netting material. The size of the cage shall be preferably 3 m x 2 m x 1m. The cages have to be arranged in a row so that feeding and monitoring can be easily carried out. A stocking of 10 crab/m^2 in cages and 5 crabs/m^2 for pens is recommended. Since the stocking rate is higher in cages, and to minimise the mutual attacks,